EFFECT OF EFFECTIVE MICROORGANISM (EM) ON GROWTH AND YIELD OF AEROBIC RICE VARIETY MRIA1

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DECLARATION

This Final Year Project is a partial fulfillment of the requirements for a degree of Bachelor of Science (Hons.) Technology and Plantation Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

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I hereby declare that I have checked this project and in my opinion, this project is adequate in terms of scope and quality for the award of the degree of Bachelor of Science (Hons.) Technology and Plantation Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

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ABSTRACT

EFFECT OF EFFECTIVE MICROORGANISM (EM) ON GROWTH AND YIELD OF AEROBIC RICE VARIETY MRIA1

Rice is the staple food for Malaysia. Rice production in the country is insufficient to meet the demand of our population. To overcome the shortage Malaysia had to import rice from country like Thailand. An abandoned land commonly found in the country can be utilized for aerobic rice cultivation. Other than that, to overcome the fertility problem of abandoned lands, inorganic fertilizers can be used together with EM. In this study, the effective microorganisms improve soil chemical properties, soil fertility and plant where they do activities of microorganisms in the soil. EM that originating from liquid in which is consist of various species of microorganisms such as lactic acid bacteria, photosynthetic bacteria, yeast, and others. The study was conducted in a greenhouse at UiTM Jasin by making 5 treatments T1, T2, T3, T4 and T5 (T1 = NPK, T2 = EM 1:500, T3 = EM 1:700, T4 = EM 1:900 and T5 = NPK + EM 1:300). The observation of this study was conducted for 9 weeks until the plant reaches the stage of reproductive (70 – 90 days). Besides that, the identification and estimation of the bacterial population in liquid concentration of effective microorganism (EM) was identified by differences in CFU in each treatment of EM and EM in the soil. The results show that NPK fertilizers is more effective for growth of rice than EM. All EM treatment showed no significant difference between all of them in terms of plant height, number of tiller, the number of leaves, and number of panicle. However, there is significant difference in nutrient content and pH value in the soil. Although EM is less effective than NPK fertilizers in terms of overall growth, they seem to improve the activities of microorganisms in the soil. In the long run EM has a potential to improve the yield of rice.